

**REMARKS**

Claims 1, 3-17, 19-21, 23-31, 33-38, 41 and 42 are pending and under consideration. Claims 1, 17, 21, 31, 41 and 42 are currently amended. No new matter is presented in this Amendment.

**REJECTIONS UNDER 35 U.S.C. §102:**

Claims 17, 19-21, 23-25, 27-29, 31, 37, 38, and 42 are rejected under 35 U.S.C. §102(b) as being anticipated by Yokoi et al (hereafter Yokoi) (U.S. Patent 5,732,062).

Applicants respectfully traverse this rejection for at least the following reason.

Regarding the rejection of independent claim 17, it is noted that claim 17 recites a method of recording data onto an optical recording medium, the method comprising: generating a recording waveform having a recording pattern for high-speed recording; and forming a first level of the data as a mark and a second level of the data as a space, using the generated recording waveform, wherein the recording pattern is formed of recording multi-pulse trains including a first pulse, a multi-pulse train, and/or a last pulse, wherein power levels of the multi-pulse trains are equal to a high write power level or a low write power level, power levels of the first pulse are equal to the high write power level or to the low write power level, power levels of the last pulse are equal to the high write power level or a bias power level, and the **low write power level** is **higher than** the **bias power level for a last pulse** of the recording multi-pulse trains.

The Office Action relies on Yokoi for such teachings and in particular in FIG. 7, elements Af, Ar and C. The Office Action further recites that Ar corresponds to a low write power and that Ar is at a higher power level than cooling pulse level C, which is alleged to be a lower bias voltage.

However, a careful review of Yokoi indicates that the reference teaches an information recording system including a light source emitting a multi-pulse light which includes a head heating pulse, Af, Ar a head cooling pulse, C, and read heating pulse B and read cooling pulse C (abstract, column 4, lines 59-67 and column 13, lines 61-67 through column 14, line 1). In other words, Yokoi discloses a multi-pulse emission waveform for recording a mark on a recording medium, wherein pulses Af and Ar are pulses to heat the head, pulses B and Br are pulses to

form a mark on the medium and pulse C are cooling pulses. Yokoi fails to teach or suggest that the cooling pulses are bias power levels. As a matter of fact, nowhere in the reference is bias power or a bias power level recited. Accordingly, the allegation that the cooling pulse C represents a bias voltage as alleged in the Office Action (see page 15 of the Office Action) is unfounded. However, assuming arguendo that the cooling pulse C were a bias voltage, the alleged low write power Ar is still not a **last pulse** of the recording multi-pulse train, as recited in independent claim 17. Rather Ar is a head heating pulse located at the **beginning** of the multi-pulse light-emission waveform.

Therefore, the failure to provide an explanation as to the relationship between a cooling pulse and a bias voltage, coupled with the fact that Yokoi does not, in fact, disclose a **low write power level** being **higher than** the **bias power level for the last pulse** of the recording multi-pulse train, leaves one with the conclusion that Yokoi does not disclose the features of claim 17.

Accordingly, Applicants respectfully assert that the rejection of claim 17 under 35 U.S.C. § 102(b) should be withdrawn because Yokoi fails to teach or suggest each feature of independent claim 17.

Regarding the rejection of independent claims 21, 31 and 42, it is noted that these claims also recite, amongst other novel features, a low write power level being higher than a bias power level for a last pulse of the recording multi-pulse train, which is substantially similar subject matter as the above noted feature of claim 17. Thus, the rejections of these claims are also traversed for the reasons set forth above.

Furthermore, Applicants respectfully assert that dependent claims 19, 20, 23-25, 27-29, 37 and 38 are allowable at least because of their dependence from claims 17, 21 and 31 and because they include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 19, 20, 23-25, 27-29, 37 and 38 also distinguish over the prior art.

#### **REJECTIONS UNDER 35 U.S.C. §103:**

Claims 1, 3-16, 30, and 41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yokoi et al (hereafter Yokoi) (U.S. Patent 5,732,062) and in view of Furukawa et al. (hereafter Furukawa) (U.S. Patent 6,343,062).

Applicants respectfully traverse this rejection for at least the following reason.

Regarding the rejection of independent claim 1, it is noted that claim 1 recites an optical recording medium recording, erasing, and reproducing data, comprising: a recording layer having a specific zone in which additional recording information, including power information for high-speed recording of a recording pattern for data recording is recorded, wherein the power information indicates that the recording pattern is formed of a recording multi-pulse train including a first pulse, a multi-pulse train and/or a last pulse, wherein power levels of the multi-pulse train are equal to a high write power level and or a low write power level, power levels of the first pulse are equal to the high write power level or to the low write power level, power levels of the last pulse are equal to the high write power level or to a bias power level, and the low write power level is set to be higher than the bias power level.

As noted above, Yokoi discloses an information recording system including a light source emitting a multi-pulse light which includes a head heating pulse Af, Ar a head cooling pulse C, and read heating pulse B and read cooling pulse C (abstract, column 4, lines 59-67 and column 13, lines 61-67 through column 14, line 1).

As also noted above, nowhere in the specification of Yokoi is there a reference to a bias power level. Even assuming arguendo that the cooling pulse C were a bias power level, then the low write power level would be equal to the bias power level and not higher than the bias power level, as recited in independent claim 1.

Accordingly, Yokoi fails to teach or suggest the novel features of independent claim 1.

Furukawa on the other hand discloses an optical disc in which tracking of a target groove track or a target land track can be controlled regardless of the guide-groove depth by detecting the inversion in tracking polarity according to a groove depth in advance (column 5, lines 2-8).

Furukawa makes no reference or suggestion of power information indicating that the recording pattern is formed of a recording multi-pulse train including a first pulse, a multi-pulse train and/or a last pulse, wherein the recording multi-pulse train has high and low write power levels, and the low write power level is set to be higher than the bias power level.

Accordingly, Furukawa fails to cure the deficiencies of Yokoi and therefore, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. § 103 (a) should be withdrawn because neither Yokoi nor Furukawa, whether taken singly or combined teach or suggest each feature of independent claim 1.

Regarding the rejection of independent claim 41, it is noted that this claim also recites,

amongst other novel features, power information indicating that a recording pattern is formed of a recording multi-pulse train including a first pulse, a multi-pulse train and/or a last pulse, wherein the power information indicates that the recording pattern is formed of a recording multi-pulse train including a first pulse, a multi-pulse train and/or a last pulse, wherein power levels of the multi-pulse train are equal to a high write power level and or a low write power level, power levels of the first pulse are equal to the high write power level or to the low write power level, power levels of the last pulse are equal to the high write power level or to a bias power level, and the low write power level is set to be higher than the bias power level, which is substantially similar subject matter as the above noted feature of claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Furthermore, Applicants respectfully assert that dependent claims 3-16 and 30 are allowable at least because of their dependence from claim 1 and 21 and because they include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 3-16 and 30 also distinguish over the prior art.

Claims 26 and 33-36 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yokoi et al (hereafter Yokoi) (U.S. Patent 5,732,062) as applied to claim, 17, 19-21, 23-25, 27-29, 31, 37, 38, and 42 above, and further in view of Minemura et al. (hereafter Minemura) (U.S. Patent 5,608,710).

Applicants respectfully traverse this rejection for at least the following reason.

Initially it is noted that claims 26 and 33-36 depend from independent claims 21 and 31 and as noted above, Yokoi fails to teach or suggest the novel features recited in independent claims 21 and 31.

Minemura on the other hand discloses an optical disk drive and medium for improving rewrite times in order to increase the density of a phase-change optical disk by adapting a specific record pulse width modulation (column 1, lines 44-48). To achieve this, Minemura discloses recording a record mark with a length of NY as N adjacent spatially-independent very-small amorphous points, each with a length of L or less. Thereby, because a melted area of one amorphous point does not reach an adjacent amorphous point, the flow of the record film is controlled to improve the rewrite life (column 1, lines 49-56). Accordingly, Minemura discloses a train of spatially-independent very-small amorphous point marks formed on a phase-change

optical medium for stable high density recording and improved rewrite times. Minemura however, fails to teach or suggest a low write power level being higher than a bias power level for a last pulse of the recording multi-pulse train, as recited in independent claims 21 and 31, upon which claims 26 and 33-36 depend. Therefore, Minemura fails to cure the deficiencies of Yokoi.

Accordingly, Applicants respectfully assert that the rejection of claims 26 and 33-36 under 35 U.S.C. § 103 (a) should be withdrawn because neither Yokoi nor Minemura, whether taken singly or combined teach or suggest each feature of independent claims 21 and 31 upon which claims 26 and 33-36 depend.

**CONCLUSION:**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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